

CATALOG INFORMATION

Dept and Nbr: MATH 32            Title: BASIC PROGRAM-SCI  
Full Title: BASIC Programming for Science  
Last Reviewed: 6/28/2004

| Units   |      | Course Hours per Week |      | Nbr of Weeks | Course Hours Total |       |
|---------|------|-----------------------|------|--------------|--------------------|-------|
| Maximum | 3.00 | Lecture Scheduled     | 2.00 | 17.5         | Lecture Scheduled  | 35.00 |
| Minimum | 3.00 | Lab Scheduled         | 0    | 6            | Lab Scheduled      | 0     |
|         |      | Contact DHR           | 3.00 |              | Contact DHR        | 52.50 |
|         |      | Contact Total         | 5.00 |              | Contact Total      | 87.50 |
|         |      | Non-contact DHR       | 0    |              | Non-contact DHR    | 0     |

Total Out of Class Hours: 70.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable  
Grading:            Grade Only  
Repeatability:    00 - Two Repeats if Grade was D, F, NC, or NP  
Also Listed As:  
Formerly:        MATH 52

**Catalog Description:**  
Using the BASIC language, students design, code, execute, debug and document structured programs with emphasis on mathematical concepts. Includes decision points, looping, functions, random numbers, arrays, subroutines, iterative and sorting techniques, disk data files, and applications. Recommended for mathematics, engineering and science students.

**Prerequisites/Corequisites:**  
Math 155 or Math 156 or qualifying placement score equivalent to high school intermediate algebra course.

**Recommended Preparation:**  
Prerequisite courses taken within the last year.

**Limits on Enrollment:**

**Schedule of Classes Information:**  
Description: Programming in the BASIC language, students design, code, debug & document programs involving mathematical concepts. (Grade Only)  
Prerequisites/Corequisites: Math 155 or Math 156 or qualifying placement score equivalent to high school intermediate algebra course.

Recommended: Prerequisite courses taken within the last year.

Limits on Enrollment:

Transfer Credit: CSU;UC. (CAN CSCI6)

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

|                      |                            |                                       |                         |                        |
|----------------------|----------------------------|---------------------------------------|-------------------------|------------------------|
| <b>AS Degree:</b>    | <b>Area</b><br>B           | Communication and Analytical Thinking | Effective:<br>Fall 1981 | Inactive:<br>Fall 2004 |
| <b>CSU GE:</b>       | <b>Transfer Area</b><br>B4 | Math/Quantitative Reasoning           | Effective:<br>Fall 1981 | Inactive:<br>Fall 2004 |
| <b>IGETC:</b>        | <b>Transfer Area</b>       |                                       | Effective:              | Inactive:              |
| <b>CSU Transfer:</b> | Transferable               | Effective:                            | Fall 1981               | Inactive:<br>Fall 2004 |
| <b>UC Transfer:</b>  | Transferable               | Effective:                            | Fall 1981               | Inactive:<br>Fall 2004 |

**CID:**

**Certificate/Major Applicable:**

Not Certificate/Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

To be successful, students should be able to:

1. Discuss the topics listed in the Course Description, comparing and contrasting major results.
2. Appreciate the significance of this mathematics in the solution of important problems, for success in future work in mathematics, in applications to other disciplines, and as historical contribution.
3. Demonstrate competence in the skills from the topics detailed in Course Content.
4. Formulate a strategy to solve stated problems, choose and apply the appropriate skills, carry out the solution with correct units of measure, and estimate results to verify answers to the satisfaction of the responsible professional staff.

### **Topics and Scope:**

1. General.  
Text entering and editing, loading and saving programs, using peripheral equipment.
2. Basic Language.  
Subroutines, functions (numeric, string, user-defined), operators (relational, Boolean), file operations, arrays, random numbers, data types.
3. Programming Techniques.  
Flowcharting, structured constructs, top-down design, modular programming, menu-driven design, interactive programming, signal

data, validation of user input, hand-tracing and debugging, extended accuracy, nested loops, iterative techniques, sorting, binary search.

### Assignment:

1. The student will have daily outside reading, problem set assignments from required text(s), or instructor chosen supplementary materials.
2. Instructional methodology may include, but not limited to: lecture, demonstrations, oral recitation, discussion, supervised practice, independent study, outside project or other assignments.

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab reports, Exams

Problem solving  
50 - 75%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Performance exams

Skill Demonstrations  
10 - 25%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice

Exams  
0 - 25%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

### Representative Textbooks and Materials:

Text(s) required of each student will be selected by the department, a committee of the department, or the responsible instructor from the books currently available. Choices in the past have included:

QUICKBASIC USING MODULAR STRUCTURE by Julia Case Bradley, Iowa: Wm. C. Brown, 1988.

